

DART AEROSPACE LTD	Work Order:	23966
Description: Crosstube Extrusion (206L)	Part Number:	D6002-115
Drawing: D6002 Rev. A	Qty:	17

Step	Location	Procedure	By	Date	qty
1	EXPEDITING	Open W/O	U	05-08-05	17
2	PURCHASING	Issue P/O: <u>7008430</u> a) Extrude as per Dwg D6002 b) Material: 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) seamless aluminum tube c) Minimum ultimate tensile strength = 77 ksi d) Minimum tensile yield strength = 66 ksi g) Material certification required	U	05-08-05	17
3	RECEIVING	Receive and Inspect for transit damage Ensure Material certification is attached	CL	05/10/31	20
4	QC	Inspect Level 6 Ensure Ensure Material certification comply to Dwg D6002	J	05/11/17	20
5	FINISHING	Chemical conversion coat as per QSI 005 4.1	N/A	05-11-09	
6	STORES	Identify and Stock	J	07-11-05	20
7	EXPEDITING	Close W/O Cost / part <u>07/11/09</u> <i>Inspect Level 21</i>	U	07-11-09	

Rev	Date	Change	Revised By	Approved
A	00.11.21	New Issue	EC	
B	00.12.15	Added: Issue P/O	EC	DS

RELEASED

00.12.15

RF
03.06.05

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>A</i>	APPROVED <i>A</i>	DRAWING NO. D6002	REV. A SHEET 1 OF 1
DATE 00.11.22		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.22	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24

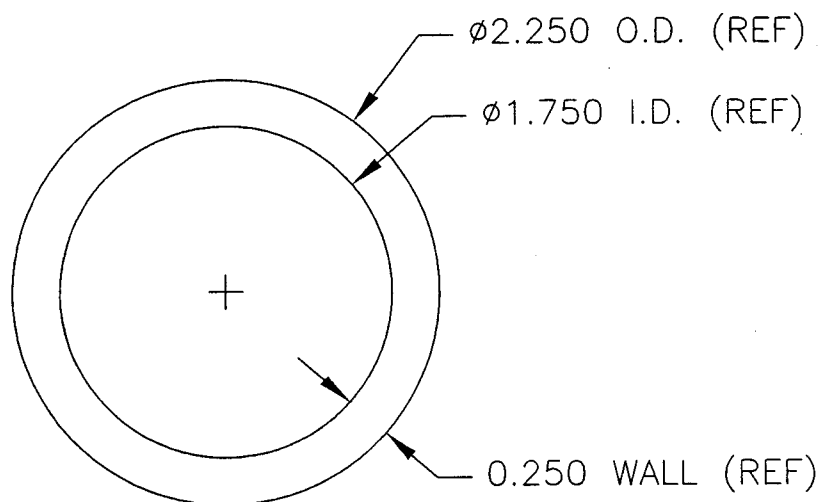
SHOP COPY

RETURN TO
ENGINEERING

UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE

WORK ORDER

NO. *23966*



NOTES

- 1) D6002-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 115" LONG TUBE: D6002-115

- 2) MATERIAL: 2.250 OD x 0.250 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.006 MEAN (± 0.012 INCLUDING OVALITY)
WALL: ± 0.008 MEAN (± 0.025 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.125/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

Copyright © 2000 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

□□□□□□□□

Job Costing Report

Dart Aerospace Ltd.
Hawkesbury

Aug 04, 2005
03:24 pm

Work Order No	: 0023966	Department Code:	
Project Name	: D6002-115	Burden Flags	: NNNNNNNN
Project For	: WK543	WO Status	: Open
Work Order Type	: Main	Invoice State	: Not Invoiced
Main WO Number	:	Invoice Date	:
House Part Number	: D6002-115	Invoice Number	:
Description	: Crosstube material	Invoice Amount	: 0.00
Manufactured	: Yes	Order Entry No	:
Amount Req'd	: 17	OE Value	: 0.00
Amount Done	: 0	Est Margin	: 0.000%
Start Date	: 08-04-05	Actual Margin	: 0.000%
Est Finish Date	: 10-29-05		
Act Finish Date	:		
Drawings Req'd	: No		
Ok for Approval	:		
Approval Rec'd	:		

\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost	0.00	0.00	0.00	0.00	0.00
Engineering Hours	0.00	0.00	0.00		
Engineering Cost	0.00	0.00	0.00	0.00	0.00
Production Hours	0.00	0.00	0.00		
Production Cost	0.00	0.00	0.00	0.00	0.00
Packaging Hours	0.00	0.00	0.00		
Packaging Cost	0.00	0.00	0.00	0.00	0.00
OverHead Hours	0.00	0.00	0.00		
OverHead Cost	0.00	0.00	0.00	0.00	0.00
CNC Hours	0.00	0.00	0.00		
CNC	0.00	0.00	0.00	0.00	0.00
Misc. Hours	0.00	0.00	0.00		
Misc.	0.00	0.00	0.00	0.00	0.00
Burden	0.00	0.00	0.00		
Total Cost	0.00	0.00	0.00		
Margin	0.000	0.000			
Selling Cost	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done	0.00	0.00
Profits/(Loss)	0.00	0.00

**ALUnna**

Abnahmeprüfzeugnis 3.1 - EN 10204:2004

Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004

Kunde: Dart Aerospace Ltd.

Client:

1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Produkt:

Product / Produit: Rohre nahtlos gepresst
Tubes seamless extruded Tubes file sur aiguille

Spezifikation:

Specification:

Werkstoff:

Alloy/Alliage:

7075

Zeugnisnummer: 714/05

Cert No.: / No. du certificat:

Bestellnummer: 2008430

Order No. / No. de commande

Auftrag: 15301/2

Our Reference/Notre Reference:

Zustand: T 6511

Temper/État

Abmessung

Size / Dimension

2,250" x 1,750" x 0,250" x 115,00"
buff finish

Kennzeichnung

Marking/Marquage:

ALUnna - Cert No. 714/05 - 7075 - T 6511 - Cast 01402194 - QQA 200/11E - 2.250" OD X 0.250" Wall - Heat No.
85/09 - Lot 15301/2-1 PO. 2008430

Lieferung

Delivered Material / Matériel délivré:

pcs. lbs
20 375

1. Chemische Analyse

Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
01402194	0,10	0,21	1,39	0,03	2,44	0,20	5,85	0,03	0,00	0,02			

Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat No.
min.	77,0	66,0				
max.						
1	81,200	74,095	10,0		154	85/09 - 20 pcs.

Ergebnis der Prüfungen:

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

KroosD



Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09
Certificate No.: 001959 QM



ALUnna

Abnahmebeauftragter

26.09.2005

Jason Murdoch

From: David Shepherd [davids@dartaero.com]
Sent: November 9, 2005 9:28 AM
To: Jason Murdoch
Subject: Re: extrusion

The risk of corrosion is way down this time of year because the humidity is way down. Therefore, I don't see a problem holding off on the alodine for a few weeks until you have more time. With respect to the 412 Tri-beam stuff, I agree. I would just skip the alodining step and start machining it right away.

David

----- Original Message -----

From: Jason Murdoch
To: davids@dartaero.com
Sent: Tuesday, November 08, 2005 8:50 AM
Subject: extrusion

Hi Dave,

We have a bunch of x-tube mat'l that came in and I was wondering since it's coated in a lubricant if it should be alodined within a certain time frame or if at all ? it's on the w/o so I think it should be but time is very unavailable at the moment. But my biggest concern is the tri-beam ends mat'l. I think that can wait seeing as it's a work in progress and trial and error in bending.

jmurdoch@dartaero.com

O.C. Inspector

